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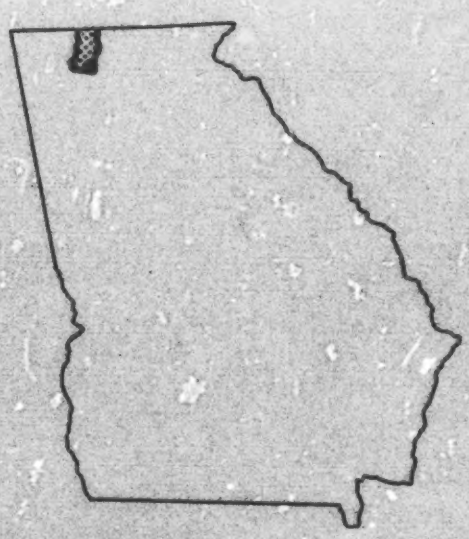
FLOOD INSURANCE STUDY

ORIGINAL

CITY OF CHATSWORTH, GEORGIA

MURRAY COUNTY



JULY 2, 1987

Federal Emergency Management Agency

COMMUNITY NUMBER - 130141

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NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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FLOOD INSURANCE STUDY

CITY OF CHATSWORTH,
MURRAY COUNTY,
GEORGIA

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the City of Chatsworth, Murray County, Georgia, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound flood plain management. Minimum flood plain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

This Flood Insurance Study was prepared by compiling existing hydrologic and hydraulic technical and scientific data prepared originally for purposes other than the National Flood Insurance Program. The data were identified as the best available at the time of compilation of this Flood Insurance Study and should depict the general conditions of the flooding sources with relative accuracy. The Federal Emergency Management Agency (FEMA) performed a cursory review and accepted the data as valid for purposes of this Flood Insurance Study and the National Flood Insurance Program. However, if better information is known to exist or has been developed since the date of this report, the information should be immediately forwarded to the Natural and Technological Hazards Division, FEMA, Atlanta, Georgia, for consideration for revision of this study.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were obtained from a Special Flood Hazard Information Report for Holly Creek and Town Branch in Chatsworth, Georgia, prepared by the U.S. Army Corps of Engineers, Mobile District (Reference 1).

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1.3 Coordination

On August 20, 1986, the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the community and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the City of Chatsworth, Murray County, Georgia. The area of study is shown on the Vicinity Map (Figure 1).

The areas studied by detailed methods were selected based upon the extent and validity of available existing hydrologic and hydraulic data. Flooding caused by overflow of Holly Creek, from about 800 feet downstream of the Louisville & Nashville Railroad to about 2,000 feet upstream of U.S. Route 76, and Town Branch, from the mouth to just downstream of Long Street, was studied in detail.

Approximate methods of analysis were used to study all remaining areas having a potential flood hazard that did not have detailed scientific or technical data available.

Approximate flooding zones have been shown for Holly Creek downstream of the Louisville & Nashville Railroad and Mill Creek within the corporate limits.

2.2 Community Description

The City of Chatsworth, the county seat, is located in central Murray County and is bordered on all sides by the unincorporated areas of Murray County. Thirty miles southeast of Chattanooga, Tennessee, and 65 miles north-northwest of Atlanta, the city sits on the western edge of the Chattahoochee National Forest. In 1980, the population of Chatsworth was reported to be 2,493, a decrease from the 1970 population of from 2,706 (Reference 2).

Chatsworth is served by U.S. Routes 76 and 411, as well as the Louisville & Nashville Railroad. The economy of the area is primarily dependent upon the tufted carpet industry.

Situated on the western fork of the southern Appalachian Mountains, the topography of the city is hilly, with elevations ranging from 710 to 790 feet National Geodetic Vertical Datum of 1929 (NGVD). The climate is temperate, with hot summers and cool, wet winters.

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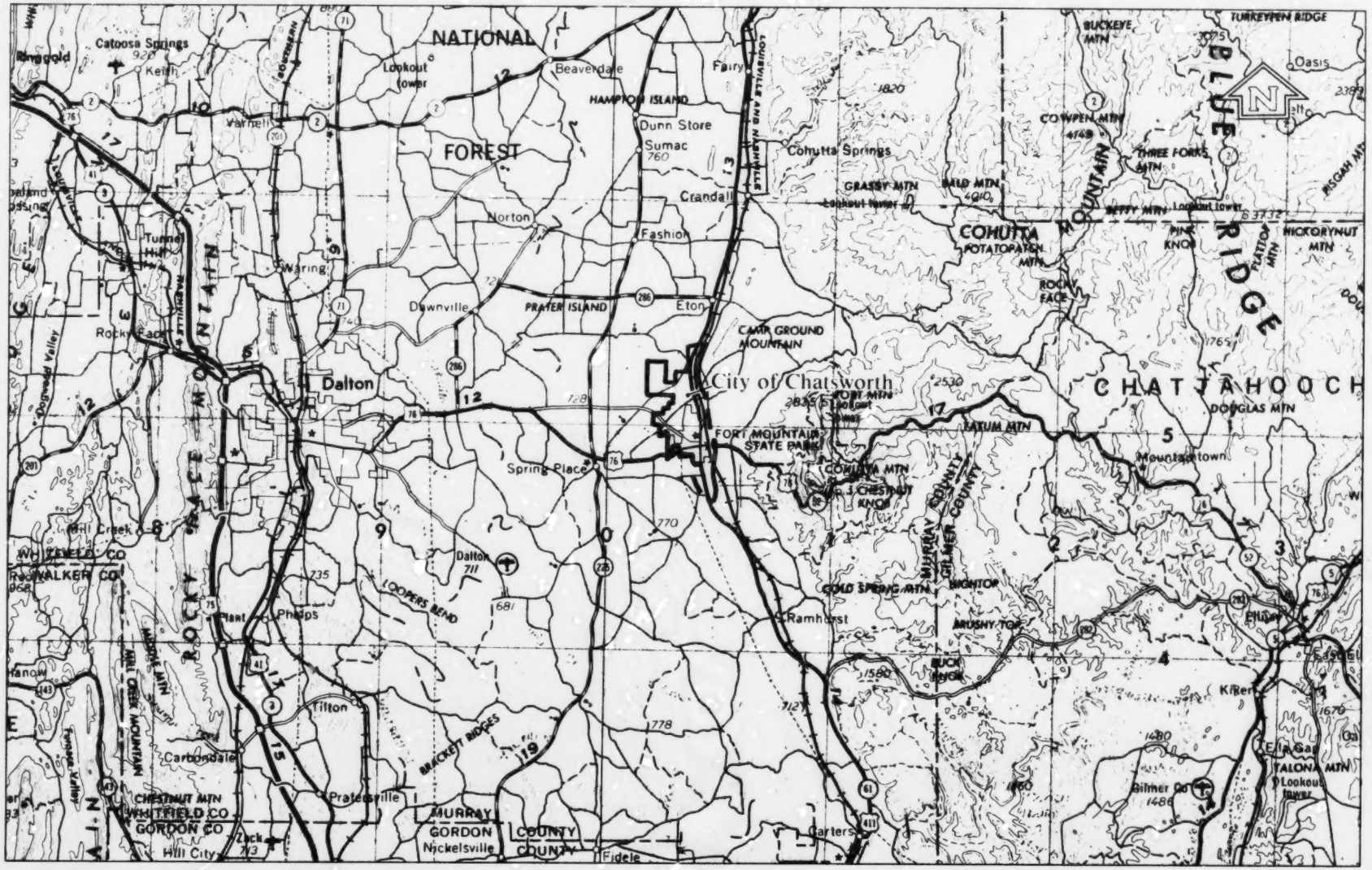

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF CHATSWORTH, GA

(MURRAY CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

FIGURE 1

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2.3 Principal Flood Problems

Due to the parameters of this existing data study, information regarding flooding problems in the community is obtained only from the source report (Reference 1) and any other readily available sources. None of these sources provided information relating to the flooding problems in the community.

2.4 Flood Protection Measures

Flood protection measures do not exist within the study area.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (one-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each riverine flooding source studied in detail affecting the community.

Discharges were developed using the flood frequency formula available from the U.S. Geological Survey (USGS) (Reference 3).

Peak discharges for the 10-, 50-, 100-, and 500-year floods of each flooding source studied in detail in the community are shown in Table 1.

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TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
HOLLY CREEK					
about 0.2 mile downstream of Louisville & Nashville Railroad	N/A	5,800	10,000	12,000	18,000
TOWN BRANCH					
at mouth	N/A	760	1,200	1,400	2,700
at Louisville & Nashville Railroad	N/A	453	775	965	2,165

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross sections were obtained by using available topographic maps (Reference 4) supplemented with spot elevations taken by field survey.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles.

Starting water-surface elevations were obtained using the slope-area method. Channel roughness factors (Manning's "n"), obtained using field observations and engineering judgment, were 0.03 in the channel and ranged from 0.03 to 0.15 in the overbank areas.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. In cases where the 50- and 100-year flood elevations are close together, due to limitations of the profile scale, only the 100-year profile has been drawn.

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the NGVD. Elevation reference marks used in this study are shown on the map and described in the exhibit labeled Elevation Reference Marks.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year flood plain boundaries and 100-year floodway to assist communities in developing flood plain management measures.

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4.1 Flood Boundaries

To provide a national standard without regional discrimination, the one-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for flood plain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year flood plain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24000 with a contour interval of 10 feet (Reference 4).

For the streams studied by approximate methods, only the 100-year flood plain boundary was delineated using the Flood Hazard Boundary Map for the City of Chatsworth (Reference 5).

The 100- and 500-year flood plain boundaries are indicated on the Flood Insurance Rate Map. On this map, the 100-year flood plain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE) and the 500-year flood plain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100-and 500-year flood plain boundaries are close together, only the 100-year flood plain boundary has been shown. Small areas within the flood plain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights.

Due to the parameters of this existing data study, information is obtained only from the source report. No floodway was developed in the source report (Reference 1).

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year flood plains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

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Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year flood plains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year flood plain, areas within the 500-year flood plain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and flood plain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year flood plains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For flood plain management applications, the map shows by tints, screens, and symbols the 100- and 500-year flood plains, the floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

7.0 OTHER STUDIES

Due to its more detailed analysis, this Flood Insurance Study supersedes the previously printed Flood Hazard Boundary Map for the City of Chatsworth (Reference 5).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 1371 Peachtree Street, NE., Suite 736, Atlanta, Georgia 30309.

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9.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Army Corps of Engineers, Mobile District, Special Flood Hazard Information Report, Holly Creek, Town Branch, Chatsworth, Murray County, Georgia, Mobile, Alabama, October 1974.

2. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Georgia, Washington, D.C., January 1982.

3. U.S. Geological Survey, Floods in Georgia, Magnitude and Frequency, periodically updated.

4. ————, 7.5 Minute Series Topographic Maps, Scale 1:24000, Contour Interval 10 feet: Chatsworth, Georgia, 1972.

5. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, City of Chatsworth, Murray County, Georgia, December 1979.

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ELEVATION REFERENCE MARKS

CITY OF CHATSWORTH

REFERENCE MARK	FLOOD INSURANCE RATE MAP PANEL	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
1	0005	751.45	U.S. Geological Survey monument on courthouse lawn north of sidewalk to east door of courthouse
2	0005	731.75	chiseled square on top of headwall of west end of Town Branch box culvert under U.S. Route 411
3	0005	732.78	chiseled square on top of west headwall of Town Branch culvert under North Fourth Avenue

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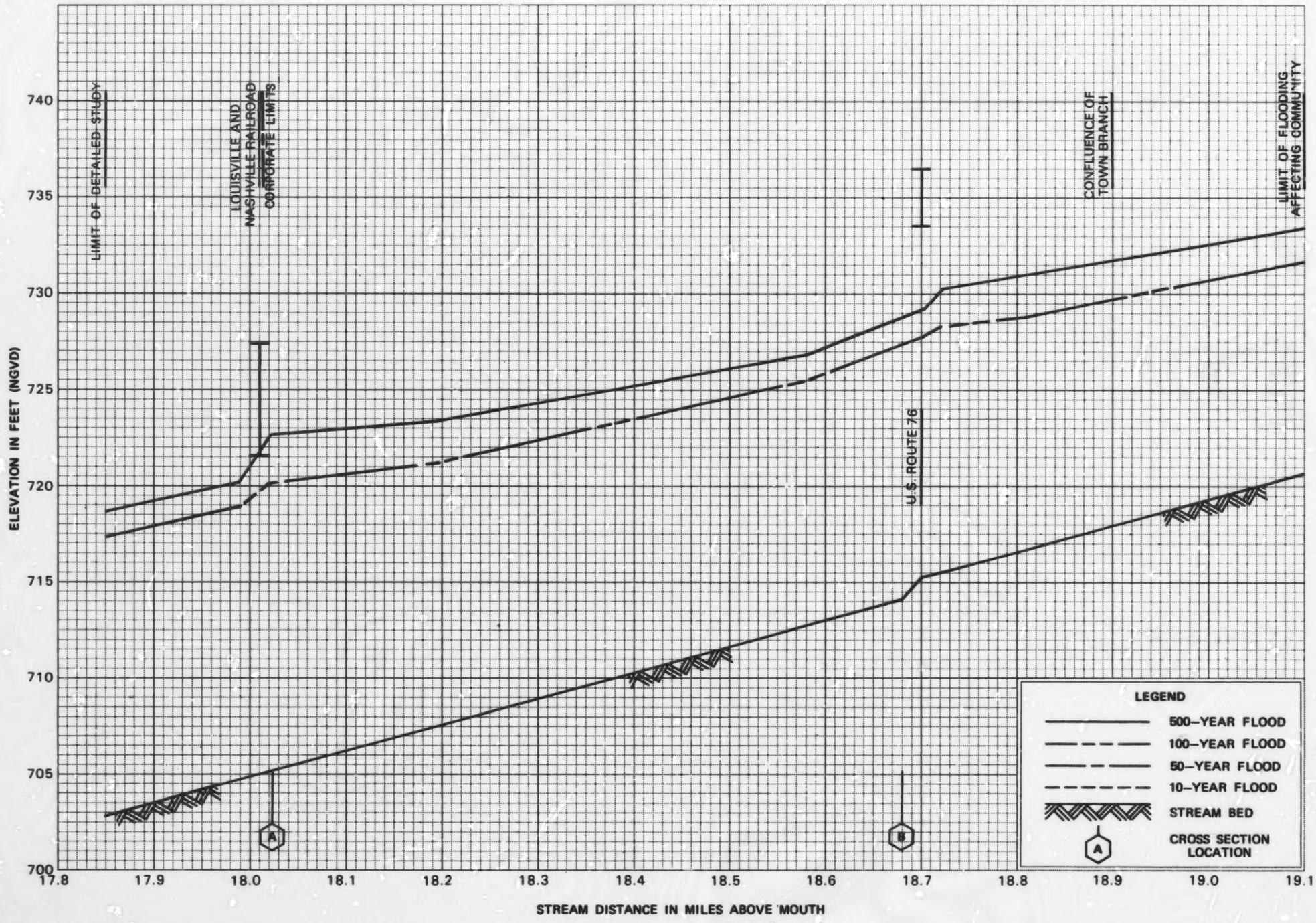

FLOOD PROFILES

HOLLY CREEK

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CITY OF CHATSWORTH, GA

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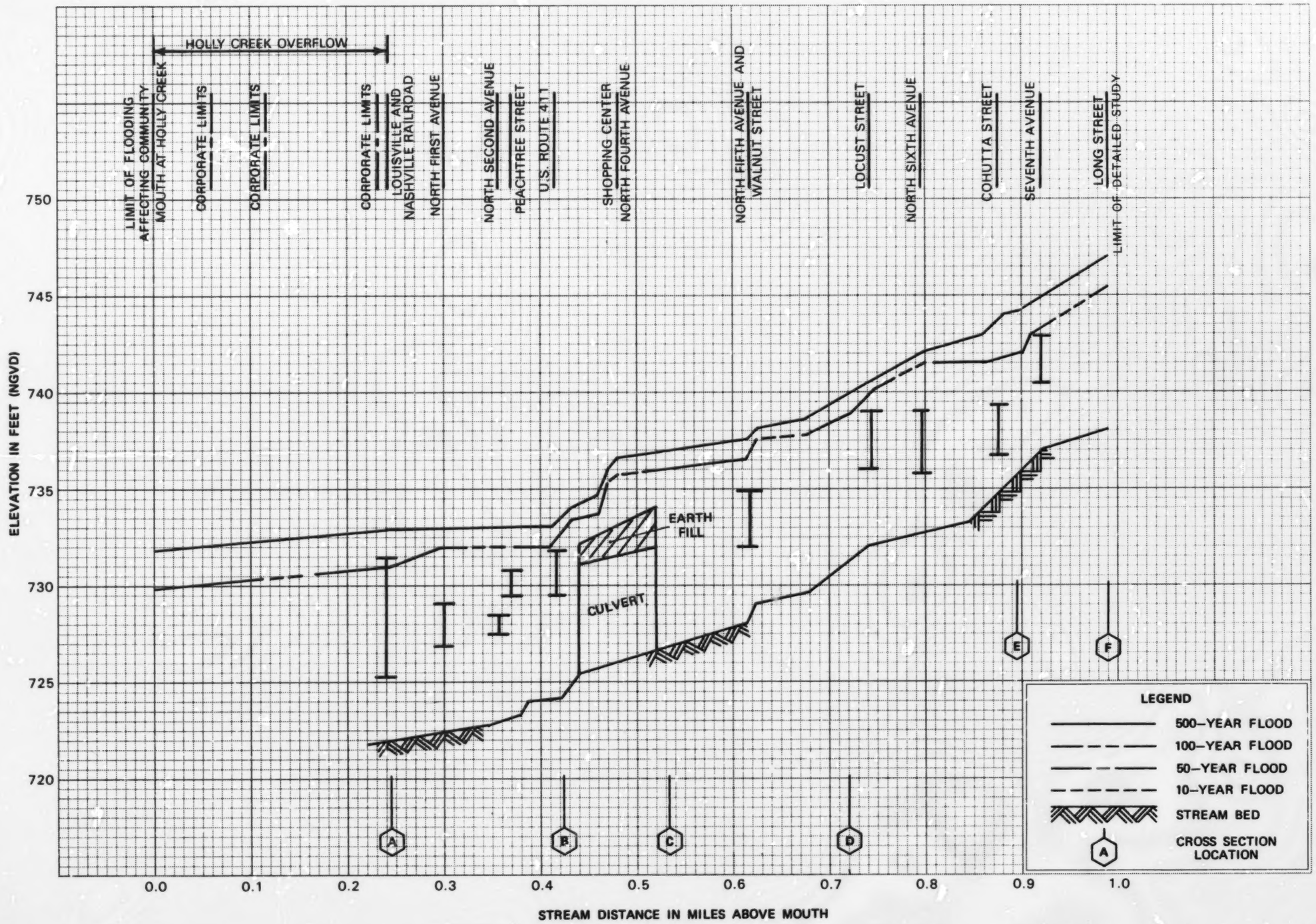

FLOOD PROFILES

TOWN BRANCH

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